CCC Misconceptions and Effective Teaching Strategies

MISCONCEPTIONS/Difficulties

* Students may have a difficult time remembering the names of the different types of reactions and what those reactions entail. Relationship analogies are a useful tool for helping them to remember them (make sure not to use any names of students in the class). For example, single displacement: Jimmy and Sarah are dating. Jimmy meets Sarah’s best friend Katie and decides to leave Sarah for her. Now Jimmy and Katie are dating and Sarah is single.
* Students may have a hard time understanding that ALL atoms in chemical equations must be balanced. You can use Legos, marshmallows or other manipulatives to help the students understand this concept.
* The pH scale can give students difficulty when trying to remember which numbers correspond to acids and which correspond to bases. A good strategy is to use mnemonics such as Bigger numbers for Basic.
* Realizing the relevance in naming chemical compounds may be difficult for some students. Giving students an example such as the petition against dihydrogen monoxide may help them to better understand the need for such a system.
* Engaging students in chemistry can be a challenge. Showing students videos or demonstrations which display concepts being taught may pique their interests and inspire a curiosity to learn more about the subject.